DOCUMENT RESUME

ED 048 520 AA 000 686

AUTHOR	Sharon, Amiel T.
TITLE	College Credit for Off-Campus Study.
INSTITUTION	ERIC Clearinghouse on Higher Education, Washington, D.C.
REPORT NO	R - 8
PUB DATE	Mar 71
NOTE	18p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	*College Credits, Correspondence Courses, Credits, Educational Television, *Equivalency Tests, *Higher Education, *Home Study

ABSTRACT

This paper summarizes some of the recent literature on unconventional college-level education gained outside the classroom. The first section reviews the major types of off-campus learning for which college credit is received, including correspondence instruction, educational television, military service experiences, and independent study. The second section discusses methods by which formal recognition is provided for this education, such as The College-Level Examination Program, The New York State College Proficiency Examination Program, and The General Educational Development Testing Program. A list of references concludes the paper. (AF)

ED 048 520

College Credit for Off-Campus Study

REPORT 8

AA 000 686

ERIC CLEARINGHOUSE ON HIGHER EDUCATION • The George Washington University, One Dupont Circle, Suite 630, Washington, D.C. 20036 • March 1971

COLLEGE CREDIT FOR OFF-CAMPUS STUDY

Amiel T. Sharon

Report 8

ERIC Clearinghouse on Higher Education
The George Washington University
1 Dupont Circle, Suite 630
Washington, D.C. 20036
March 1971

FOREWORD

This review explores ways in which individuals learn outside the classroom or in institutions whose primary function is not strictly defined as education. It describes ways in which off-campus learning–such as correspondence study, service-related courses, educational television and independent study–is translated into college credit. The author, Amiel T. Sharon, is Associate Research Psychologist at the Educational Testing Service. During the last few years, much of his research has concerned the validity of the College-Level Examinations and the Tests of General Educational Development for granting academic credit to college-bound individuals who have learned in nontraditional ways.

The eighth in a series of reports on various aspects of higher education, this paper represents one of several kinds of Clearinghouse publications. Others include short reviews, bibliographies, and compendia based on recent significant documents found both in and outside the ERIC collection. In addition, the current research literature of higher education is abstracted and indexed for publication in the U.S. Office of Education's monthly volume, *Research in Education.* Readers who wish to order ERIC documents cited in the bibliography should write to the ERIC Document Reproduction Service, Leasco Information Products, Inc., 4827 Rugby Avenue, Bethesda, Maryland 20014. When ordering, please specify the ERIC document (ED) number. Payment for microfiche (MF) or hard/photo copies (HC) must accompany orders of less than $10.00. All orders must be in writing.

Carl J. Lange, *Director*
ERIC Clearinghouse on Higher Education
March 1971

TABLE OF CONTENSS

		Page
I.	SUMMARY AND INTRODUCTION	1
II.	NONTRADITIONAL EDUCATION FOR WHICH COLLEGE CREDIT IS RECEIVED	2
III.	COLLEGE CREDIT BY EXAMINATION	9
IV.	CONCLUSION	13

This publication was prepared pursuant to a contract with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

I. SUMMARY AND INTRODUCTION

Summary

In recent years many individuals, especially adults, have been educating themselves in nontraditional ways outside the classroom or in institutions whose primary function is other than education. Off-campus study takes place through correspondence and television courses, in the military services, in business and industry, in churches and museums, by independent study, and in countless other ways. The growing number of vocations requiring college degrees suggests that there is a need for translating knowledge acquired outside of college into academic credits.

Although correspondence study is a popular method of off-campus education, it receives only a limited amount of formal recognition by colleges and universities. Correspondence instruction is plagued by several serious problems. Many private home study schools engage in questionable or fraudulent practices and thereby produce a poor image of all correspondence instruction. The dropout problem has been intensively researched in recent years and a number of reasons have been offered to explain why a large percentage of the students who enroll in correspondence courses never complete them.

Educational television consists of the commercial, educational, and closed-circuit systems. Each has its advantages and disadvantages. Although many institutions of higher education are using on-campus closed-circuit installations for instructional purposes, there are relatively few institutions that offer credit courses on open-circuit television. The overall impact of educational television on higher education appears to be minimal. There is a general resistance by colleges and universities to make full use of this instructional medium. The audience for open-circuit, educational television is large but relatively few home viewers actually follow credit courses on television.

The armed services provide a major share of the nontraditional instruction and training in the nation. Veterans desiring to continue their formal education in civilian institutions frequently receive credit for relevant training in the armed services. The Commission on Accreditation of Service Experiences makes credit recommendations to colleges and universities on thousands of courses offered in the armed forces. The United States Armed Forces Institute provides an extensive testing program to aid servicemen in obtaining credit for their knowledge and experience.

Many institutions have instructional programs which allow students to conduct research, read, or work on their own under faculty guidance and direction. Independent study appears to be effective in achieving certain educational objectives but is not without problems. Although most institutions will grant credit to their own students for supervised independent study, they are more reluctant to formally recognize independent study outside the institution's own program.

College credit for knowledge gained in off-campus study is awarded by many institutions for satisfactory performance on examinations. There are several programs of credit by examination used at many institutions of higher education which assume that many persons know more than their academic credentials would suggest. The College-Level Examination Program offers examinations designed to assess broad areas of undergraduate training as well as knowledge acquired in specific college-level courses. The rapid growth of the program in recent years portends that the practice of credit by examination will become widespread. The New York State College Proficiency Examination Program offers its services to individuals desiring to obtain credit and pursue their studies in New York State's institutions. The General Educational Development Testing Program aims to provide academic credit to the non-high school graduate by giving him an opportunity to obtain a high school equivalency certificate. The significance of this program for higher education is in the extensive use of its tests in admission of non-high school graduates to college.

The logical extension of the concept of credit by examination is an "external degree" program which would enable those not enrolled in a college to obtain a degree by taking appropriate examinations. External degrees, currently being considered in two states, would transfer the certification of academic credentials from academic institutions to state agencies. Since most colleges and universities are reluctant to award an extensive amount of credit for off-campus study, the proposed external degrees should be a great boon to those who cannot attend regular college classes.

Introduction

The system of American higher education has traditionally stressed and rewarded formal education more than learning acquired outside of school. The credit system

established in colleges and universities requires that a student attend classes and accumulate course credit before a diploma can be granted. The crucial factor in the certification of academic credentials is the amount of time spent in the classroom rather than level of knowledge or academic achievement. Although it is obvious that there is a strong relationship between time spent in the classroom and academic achievement, there are many exceptions to this generalization. In recent years millions of individuals have been educating themselves outside of school in nontraditional ways in institutions whose primary functions are other than education. These individuals are learning through correspondence and television courses, in the military services, business and industry, churches, and in various other primarily noneducational organizations. Many are also learning independently by reading books, going to museums and concerts, and in countless other ways.

An attempt is made in this paper to summarize the recent literature on unconventional college-level education gained outside the classroom. Two major topics will be discussed. The first will review the major types of off-campus learning on which information has been recently made available. The second will deal with equivalency testing or the granting of academic credit by examination. Since credit for off-campus study may or may not involve equivalency testing, the two topics are to some extent complementary. The first topic describes several types of unconventional education whereas the second topic discusses methods by which formal recognition is provided for this education.

Two current trends emphasize the need to consider the problem of equivalency in higher education. The first trend is the growing number of adults engaged in learning activities outside of a traditional school system. Johnstone and Rivera (1965) estimated that about 25 million adults, or about one in five persons, were making a systematic effort to acquire new skills, information, and knowledge in one recent year. Most of these adults did not learn at institutions whose primary goal is education, and only 4 percent took courses for which formal credit was received. More recently, Moses (1969) estimated that more than 82 million adult Americans will be involved in educational programs outside the mainstream of education by 1975.

The second trend is the ever-increasing requirement of many vocations for college-trained individuals. One cannot enter professions such as law, engineering, medicine, teaching, and architecture without a baccalaureate degree. An academic degree is also required for the privilege of taking an examination for entrance into many professions (Spurr, 1970). Many nonprofessional vocations are also making college degrees mandatory. Business and civil service jobs often set up barriers against the promotion of qualified applicants who lack diplomas. Even in the Armed Services it has become very difficult to obtain a commission without a college degree. Howe (1967), a former United States Commissioner of Education, indicates that,

> There is considerable evidence that public policy and institutional practice make it extremely difficult for competent but uncredentialled persons to have a fair crack at competitive situations whether they be social, vocational, or educational (p. 3).

The great emphasis on credits, degrees, and diplomas has prompted some critics of the American educational system to suggest that it has produced a "credential society" (Time, 1970).

The two trends, that of a growing adult education outside of the traditional educational institutions and that of a growing number of vocations requiring college degrees, suggest that there is a need for translating knowledge acquired outside college into academic credits. The following section describes some ways in which people are educating themselves outside the classroom, the recent research conducted in the field, and the extent to which nontraditional educational achievement is recognized by colleges and universities.

II. NONTRADITIONAL EDUCATION FOR WHICH COLLEGE CREDIT IS RECEIVED

Correspondence Instruction

Correspondence instruction has been defined by Mackenzie, et al. (1968) as "instruction offered through correspondence which requires interaction between the student and the instructing institution (p. 4)." Interaction generally means submitting lessons, assignments, or tests through the mail by the student and feedback from the institution to the student on his performance. Self-study programs which do not consist of interaction between a student and an institution or include only one-way action by an institution should not be regarded as correspondence study. The terms "independent study" and "home study" are sometimes used to describe correspondence study. To minimize confusion, the term "independent study" will be used in this review to describe out-of-classroom learning by resident students enrolled in a degree program of a college or university, while the term "home study" will be employed primarily in connection with private correspondence schools.

The most comprehensive of recent works on correspondence instruction has been the Correspondence Education Research Project (CERP) directed by Mackenzie, et al. (1968). This project reviewed the history of correspondence instruction in the United States, surveyed the current practices and problems in the field, and analyzed

and evaluated the method. According to CERP, correspondence instruction began in 1873 in the United States with Anna Eliot Ticknor's Society to Encourage Studies at Home. But it was not until the turn of the twentieth century that universities offered correspondence courses Many universities followed the lead of the University of Chicago and established their own home study department. By 1964 there were 64 colleges and universities with correspondence programs. Most of these institutions offered courses for degree credit.

Although colleges and universities were among the early major suppliers of correspondence instruction, in 1965 they accounted for only about 8 percent of the students enrolled in correspondence courses. CERP estimated that the total enrollment of students was about 3 million. The largest supplier of correspondence courses was the armed forces which accounted for about 60 percent of the total enrollment. Private home study schools enrolled nearly 22 percent of the total. The remaining 9 percent of correspondence students were enrolled in the United States Armed Forces Institute (USAFI), religious organizations, business and industry, the federal government, various associations, and labor unions. It should be noted that USAFI is not connected with the instructional programs directed by the armed services. Although it provides educational materials and services to military personnel, its courses are similar to those taught in civilian academic institutions rather than to military-oriented training.

There are several reasons for the large enrollment (1.77 million) in correspondence courses offered by the armed services. Armed forces personnel frequently cannot attend resident classes because they are quite mobile. Also, the serviceman is motivated to enroll because taking the course is likely to aid his military career. Furthermore, there is only a nominal fee for enrollment.

Outside the armed services individuals enroll in correspondence courses in order to become eligible for promotion, prepare for an occupation or a profession, satisfy intellectual curiosity, and improve general education. Job advancement appears to be the chief motive of those enrolling in private correspondence schools. A survey by the National Home Study Council of its member institutions showed that 69,000 students were taking trade and industrial courses, 64,000 technical courses, 57,000 business and commerce courses, and 23,000 applied arts courses (Educational Testing Service, 1970). The immediate goal of those enrolling in correspondence courses offered by colleges and universities, however, appears to be the attainment of a degree. A survey of a group of State University of New York (SUNY) correspondence course dropouts by Harter (1969a) indicates that the desire for college credit was the chief reason for enrolling. Other major reasons mentioned were to improve career-related skills and to become eligible for certification by meeting college degree requirements. The Association of University Evening Colleges (AUEC) and the National University Extension Association (NUEA) provide enrollment data for their member schools that also suggests the attainment of a degree is the prime reason for enrolling. In the 1968-69 academic year there were 127,231 correspondence students enrolled for degree credit as compared to 25,482 for non-degree credit and 13,456 for non-credit courses (AUEC, NUEA, 1970).

There is no information available on exactly how many institutions of higher education grant academic credit for correspondence study. In most cases an institution will grant credit for the correspondence courses it offers. The problem in the transferability of credit occurs when an institution is requested to award credit for correspondence work completed at another institution, a private school, the armed forces, or other correspondence schools. CERP surveyed 44 colleges and universities that indicated they grant credit for correspondence study. None allowed more than 50 percent of the degree credit to be earned by this method, but half permitted 25 percent of degree credit to be earned through correspondence work.

According to CERP there are two major factors obstructing the formal recognition of correspondence study by institutions of higher education. The first is the generally negative attitude of educators toward this method of instruction. CERP conducted an attitude survey of more than 800 public figures and influential citizens, including educators. Using the semantic differential technique, attitudes toward five instructional methods were assessed: correspondence instruction, television instruction, programmed learning devices, lecture and reading, and student participation. Not only was correspondence instruction rated lowest of all methods, but educators in the sample rated the method lower than the other persons in the sample. One explanation given for these results was that educators may lack adequate information about correspondence instruction.

The generally negative attitudes of educators toward correspondence instruction is also reflected in a survey of 100 faculty members at four institutions of higher education in the State of Washington (University of Washington, 1968). Many of the teachers surveyed felt that the remuneration was poor and offered little or no gain in professional recognition. Some felt that correspondence instruction was a poor substitute for classwork although the academic performance of the correspondence students was viewed to be comparable to that of resident students. The negative attitude of the instructors could be discerned by some of the motives which were ascribed to correspondence students. The faculty felt that students enroll in correspondence courses in order to take a course in an easier way, to repeat a failed course, to hasten graduation, to graduate without attendance, and to raise a low gradepoint average. Nevertheless, all faculty also believed this method of instruction should be made available to the citizens of the State.

A second major reason for the unwillingness of colleges and universities to grant credit for correspondence work, according to CERP, is the absence of a single national

accreditation agency. Such an agency should regulate and establish uniform standards for correspondence schools and standardize credit for work completed. It would probably be very similar to the British "external degree" system which is directed by the University of London (Charnley, 1967). This system makes it possible for individuals to receive credit and a college degree without having to attend classes in an institution of higher education.

The need for a national accreditation agency is most apparent in the case of the private correspondence schools. There are many fraudulent schools, frequently called "degree mills," which award degrees to students whose educational achievement is below that required by regular colleges and universities. Rugaber (1970) describes some of the questionable and fraudulent practices conducted by these schools. Some of the profit-making schools devote nearly half of their budgets to sales and promotion and earmark less than 20 percent for instruction. Rarely are any admission standards applied, and anyone willing to pay the cost is usually enrolled. No one is ever discharged from the schools for academic reasons, yet the completion rate in some large and popular courses is as low as 5 percent. The dubious practices of some private home study schools tarnish the image of all correspondence instruction. This poor image is not improved by the fact that there is an accrediting association in the field.

The accrediting association of private home study schools is the National Home Study Council (NHSC). It is a voluntary membership association providing accreditation to schools seeking to join it. Its objectives are to "Establish standards for the operation and conduct of home study schools and to serve as the accrediting agency for schools meeting these standards (National Home Study Council, 1961, p. 2)." Unfortunately, many private home study schools do not seek the accreditation of the Council. In 1970, only 131 out of about 1,000 private home study schools were accredited by the Council (Rugaber, 1970). Furthermore, the credibility of the Council has recently come into question when it withdrew the accreditation of a chain of six home study schools, but for reasons which are not completely clear, was forced to reaccredit them.

One of the recommendations resulting from CERP is that a "national examining university" be established. Among its functions would be

> ... the establishment of standards for informal courses, accreditation of courses, and the testing and validating of educational experience (however gained) in terms of units, credits, or some other measure acceptable to the academic world and in keeping with our educational tradition (p. 221).

Such a university would issue high school equivalency certificates (a function currently conducted by high schools and state departments of education) and other degrees at all levels of higher education. It could incorporate existing national testing programs now used for granting academic credit for nontraditional educational experiences: the General Educational Development (GED) Program and the College-Level Examination Program (CLEP).

Who should establish this national examining university? CERP recommends that it should be a national, voluntary organization sponsored by bodies such as the American Council on Education and the National Commission on Accrediting. It should not be under government control or under the control of correspondence school associations. Institutions of higher education would be more likely to grant credit for correspondence work if the national examining university were an independent organization sponsored by the institutions themselves. The current impetus for establishment of an examining university appears to be coming from the state level rather than from individual colleges and universities. Two states, New York and Florida, are currently considering "external degrees" based on examinations instead of college attendance (Malcolm, 1970).

Several areas of correspondence study have been investigated recently. The area of most intensive recent inquiry has been the dropout problem. This is a serious problem because a large percentage of the students who enroll in correspondence courses never complete them. There are two types of students who do not complete a correspondence course. The first type registers for a course but never completes a single lesson (the nonstart); the second type submits one or more lessons before withdrawing from the course. It is difficult to identify the second type of dropout because the criterion of course completion varies with the school. Many students have no intention of completing a course and are quite satisfied with just a few lessons.

The percentage of completion in correspondence courses varies with the type of school. Generally, no more than 20 percent complete their courses in private home study schools (Rugaber, 1970). CERP indicates that only 10 percent complete certain correspondence courses in business and industry. Harter (1969a), in surveying a group of State University of New York dropouts, found that 75 percent failed to submit lessons beyond one-quarter of the course. Despite this high and early dropout rate, 63 percent of the students in the study indicated they learned something from the course and 40 percent were planning to complete the course eventually. A study of dropouts at the University of Iowa found that from 13 to 32 percent of the students who registered for a course, depending on the number of credit hours of the course, did not submit even one lesson (Pfeiffer & Sabers (1970)). However, once a student submitted a lesson, the chances became high that he would complete the course. About four out of five students who submitted one lesson completed the course.

Why do students drop out from correspondence courses at such a high rate? Harter's (1969a) survey of SUNY dropouts indicates that the most frequent reason for discontinuing was the late return of lessons by the instructors. Other reasons given were lack of motivation and self-discipline, inability to learn independently, lack of

time, changes in plans, and inappropriate course content. Additional reasons for student withdrawal are mentioned by Pfeiffer and Sabers (1970). The objective of some students is to gain only a small amount of knowledge about a subject and this objective can be accomplished in just a few lessons. In addition, many students are discouraged by the apparent magnitude of the course. The latter reason is one explanation for the high percentage of nonstarts.

Another area of inquiry has been the characteristics of correspondence students and their attitudes toward their courses. A profile of the correspondence student has emerged from a survey of 12,000 households by Rossi and Johnstone (reported by Mackenzie, et al., 1968). The typical student is a male, age 33, who has a high school degree. He works as a craftsman or foreman and lives in a rural or other low density area. Harter's (1969b) survey of 90 SUNY students, on the other hand, indicates that two-thirds were women and 84 percent had done some college work previously.

The attitudes of students who take correspondence courses are generally favorable toward this method of instruction (Harter, 1969b; Fairbanks, 1968). A number of complaints, however, are frequently made by students. Fairbanks' study of over 1,000 correspondence students in the Oregon State system of higher education indicated that the chief complaint was that college faculty do not encourage or give sufficient advice on correspondence instruction. This finding is consistent with the results that show most educators have a negative attitude toward the method. Several major complaints of students were also noted by Harter (1969b). Excluding written assignments, most of the students did not receive any communication from their instructors. Return of lessons was frequently delayed; 20 percent of those surveyed indicated that it took 3 weeks or longer to have lessons returned. Finally, the instructors' comments on returned assignments were of little or no help to most students.

One of the most pressing tasks of suppliers of correspondence instruction is to demonstrate to educators that the method is not inferior to other methods of instruction. There is a need for research on the effectiveness of the method in achieving stated educational objectives. Unless such research is conducted, it will be difficult to change the negative image of correspondence instruction and convince the skeptics of its usefulness. The existing problems of financial support and qualified staff might be eliminated once it can be shown that the academic achievement of correspondence students is comparable to that of resident students and that correspondence instruction is an effective teaching tool for those who cannot attend regular college classes.

Educational Television

There are three types of educational television systems in the United States: commercial, educational and closed-circuit. The *commercial* system consists of noneducational television stations that broadcast educational programs. For example, the program "Sunrise Semester" has been aired on a network of approximately 90 commercial stations for the past 8 years. The program is produced by New York University and is used by institutions of higher education across the country. The *educational* system consists of some 120 television stations owned and operated by educational organizations. Much of the programming originates from National Educational Television (NET) or a regional network. An example of the way this system is used to bring college-level courses to home viewers is New York State's "University of the Air." College-level courses, sponsored by the City and the State Universities of New York are aired on the educational channels of five major cities in the state. The *closed-circuit* systems consist of on-campus studios with distribution lines usually limited to a single campus. It is estimated there are nearly 1,000 installations serving educational purposes. A typical example of the closed-circuit system's use in higher education might be the University of Miami's installation which can televise lectures to as many as 1,800 students. The videotape provides the university with the option of rerunning the lectures at any time.

The type of programming televised on a school's closed-circuit system usually has a similar format to other courses offered at the school. The more widely viewed commercial and educational systems, however, have two different types of programming. The first type, called instructional television (ITV), is arranged for formal instruction in a manner similar to academic courses taught in the classroom. The second type, called public television, covers broad educational and cultural programs which are not arranged for formal instruction. A comprehensive status report on all aspects of public television has been prepared by the Carnegie Commission on Educational Television (1967).

The advantage of a closed-circuit system over a broadcast station is that in the former system there is more direct control by an institution over its students and programs. It is difficult for a broadcast station to devote a significant amount of time to any single subject. Some cities have two broadcast stations, one of which is devoted exclusively to formal instruction. The advantage of a broadcast station, however, is that the audience for any program is much larger. Even the 1,800 students who can be reached by the University of Miami's closed-circuit system at any one time are only a small fraction of the estimated 32,000 persons who viewed a college-level course aired on a Long Beach, California, broadcast station.

Various estimates of educational television's audience have been made. The A.C. Nielsen Company estimated that almost 7 million homes tuned an educational television station in an average week in 1966 (reported by the Carnegie Commission on Educational Television, 1967). Since there are usually several viewers in each home, it was estimated that the total number of people reached in a

week exceeded 16 million. This figure apparently does not account for all of educational television's audience because the viewers of the commercial and the closed-circuit systems were not included in the estimate. The size of instructional television's audience was estimated at 11 million for the 1963-64 academic year (Murphy & Gross, 1966). Of this total, about 600,000 were enrolled in colleges and universities and the rest were in elementary and secondary schools.

Many colleges and universities already use educational television. One survey of 882 of the nation's institutions of higher education indicates that about 42 percent of the institutions use television (Brick & McGrath, 1969). Most campuses have closed-circuit systems employed for televising films and lectures. Television is also used for teacher training by videotape playbacks of live class meetings. The advantages of using television on campus are that it is economical, efficient in teaching certain concepts or procedures, and a good tool for self-evaluation through videotape. Since it often places a heavier workload on instructors, some faculty resist using it.

To what extent can individuals receive credit for learning through educational television? The credit given for completing on-campus television courses is generally the same as that given for courses not taught by television. A number of colleges and universities, however, are also offering credit courses on open-circuit television to bring programs directly to the viewers' homes. The latter development is most significant for equivalency in higher education because there are many persons who, for one reason or another, are not able to attend campus courses.

A successful use of television for bringing credit courses to the home viewer has been made by Chicago's TV College (Erickson et al., 1964; Murphy & Gross, 1966). The college, which is part of the city's free junior college system, enrolls students for both credit and noncredit courses. The programs are aired on the open-circuit system of the local educational television station. There were about 10,000 students enrolled in the College in 1963-64. Between 70 and 75 percent of those who enrolled completed their courses. Most of the students working toward a degree at Chicago's TV College combine on-campus courses with television instruction. Some students, however, are earning degrees solely by televised instruction. Many of these students, who are housewives, prison inmates, and handicapped, would miss the opportunity for higher education without this innovative approach to higher education.

Those enrolled in courses offered by Chicago's TV College and in other similar TV colleges appear to be quite different from the typical college population. They are older than the average college student and more responsive to instruction by television. It was found in Chicago's TV College that younger students who took television courses on campus performed less well and withdrew from courses in greater numbers than older, more mature adults. When supplementary live instruction was given to the campus students, their interest and academic performance was raised significantly.

The characteristics and preferences of those who enroll in television credit courses requiring little or no campus attendance has been investigated in several recent studies. Stecklien, et al. (1966) found that the typical person enrolled in the University of Minnesota's TV College was a 31-year-old married woman with one child, was a high school graduate, and sought a college degree in teaching or the liberal arts. She enrolled in the TV College because she could avoid traveling to the campus. Long Beach City College (1968) enrolled over 2,000 students in a health education credit course aired over open-circuit television and estimated that about 32,000 adults viewed the program each week. Most of those enrolled were over 30 years of age and married. About half the students completed the course. Of those completing, 30 percent were employed full time. Similar results were reported by Brown (1967) who surveyed a group of 608 students enrolled in three college-credit courses–astronomy and Latin American History I and II–broadcast in major cities in New York State. Most of the viewers were over 30 years of age, with the largest group comprised of homemakers. Usually the programs were watched on weekday evenings. While greatest preference for future programs was in the area of social sciences, the courses offered were found interesting and satisfactory.

Many more people view open-circuit educational television than are actually enrolled in credit courses. The Carnegie Commission on Educational Television (1967) presents statistics on the educational level and occupational status of ETV audiences in two large cities. The largest educational-level category consisted of those who completed (but did not study beyond) high school. The other viewer groups, in order of size, were those who completed college, had some college, studied beyond A.B., had some high school, and completed eighth grade or less. In the occupational categories, business and government occupations composed the largest group followed by technicians and skilled labor, unskilled labor, professional, clerical, retired, homemakers, and students. These results should not be taken to mean that certain educational or occupational groups are more likely than others to view educational television. The composition of these groups in the population varies, and other factors being equal, the proportion of these groups viewing educational television would be expected to equal their proportions in the population.

Although televised instruction has been used extensively in colleges and universities for over a decade, its overall impact on higher education appears to be minimal. Johnstone and Rivera (1965) estimated that fewer than 300,000 adults had followed an educational course on television in 1961-62. Murphy and Gross (1966) indicate that there is a general resistance on the part of colleges and universities in making use of television, even though the effectiveness of this instructional medium has been demonstrated in several exhaustive studies. It is unfortunate that

relatively few institutions have attempted to bring credit courses to the home viewer. The research evidence demonstrates that adults who cannot attend classes on campus can successfully learn from courses offered via television.

Military Service Experiences

The armed services provide a major share of the nontraditional instruction and training in the United States. As was mentioned earlier, almost 2 million servicemen were enrolled in correspondence courses in a recent year. The major training of military personnel, however, is not by correspondence but through thousands of formal resident school courses. Many of the courses which train servicemen to function in a given capacity are military in nature and are, therefore, not equivalent to any courses taught in civilian institutions. There are, however, many courses which are similar or identical to courses taught at institutions of higher education. Thus, it is appropriate for veterans desiring to continue their formal education in a civilian college or university to receive recognition for relevant training in the armed services in the form of academic credit.

The accrediting body which formally evaluates the courses and programs offered by the armed services for collegiate institutions is the Commission on Accreditation of Service Experiences (CASE). This Commission is not a military agency but is associated with the American Council on Education, an independent, nonprofit organization. The Commission was formed shortly after World War II to help returning servicemen continue their formal education. As one of its major functions it reviews military service courses and makes credit recommendations to colleges and universities on the basis of the review. A second major responsibility is to supervise the General Educational Development (GED) Testing Program.

The credit recommendations prepared by the Commission on Accreditation of Service Experiences are published in the *Guide to the Evaluation of Educational Experiences in the Armed Services* (Turner, 1968). This guide was prepared with the aid of civilian educators, experts in various academic areas, who analyzed and evaluated 8,814 formal service school courses. These courses are conducted for a specific period of time with a prescribed program of instruction. No evaluations are made of informal, on-the-job training, service jobs, training programs conducted overseas, and service extension programs. All formal resident programs of the Air Force, Army, Coast Guard, Marine Corps, Navy, and Department of Defense are evaluated. Five items of information are provided for each course: title, location of training, length of training, objectives of instruction, and credit recommendation at the collegiate level. An exhibit from the guide is below:

> Missile Technician, Class B
> (Guided Missileman, Class B)
>
> Location: Naval Guided Missiles School, Dam Neck, Va.
> Length: 38 weeks
> *Objectives:* To train personnel in the fundamentals, theory, and practical application of guided missiles.
> *Instruction:* Numbering systems; algebra; equations; special products and factoring; slide rule and powers of ten; fractions and fractional equations; trigonometry; calculus; plane vectors; exponents and radicals; logarithms; mechanics; properties of matter; heat; sound, light; electricity and magnetism; fundamentals of d.c. and a.c.; power supplies and amplifiers; synchros and servos; modulation and demodulation; special circuit transistors.
> *Credit recommendation, collegiate level:* 4 semester hours at the freshman level in physics, 5 semester hours at the freshman level in mathematics, 3 semester hours in electricity and electronics, and credit in electrical laboratory on the basis of demonstrated skills and/or institutional examinations (p. 328).

The Commission's point of view, stated in the preface of the *Guide*, is that college credit should be awarded to veterans only for valid educational experiences that have been carefully appraised by civilian educators. The Commission does not intend to make indiscriminate credit recommendations as a reward for serving in the armed services.

The credit recommendations of the Commission are advisory only and each institution of higher education has the option of granting any number of credits or none at all. CASE's (1969) survey of the policies of 1,968 colleges and universities indicated that 1,097 or 73 percent of institutions with established policies granted credit to veteran students for formal service school programs on the basis of evaluations made by the Commission. Although this survey indicates that many institutions have policies for awarding credit to the veteran, in some cases the veteran does not receive deserved credit for relevant military experiences. For example, the National Committee for Careers in Medical Technology (1970) indicates that CASE's recommendations of credit for military medical laboratory courses are not followed by colleges unless there is some verification of what the medical corpsman learned from these courses. Furthermore, medical corpsmen returning to civilian life, despite their training, can currently begin a career only at the lowest level in the medical laboratory field.

A survey by Young (1970) of over 1,500 men separated from the Army Medical Corps found that most of the men were not working in the health field despite the acute shortage of personnel in allied health professions. Many of the veterans surveyed stated that they would attend junior college if advanced standing were offered to them. About four out of five said that they would take an equivalency examination for educational purposes.

In addition to making credit recommendations for resident military courses, CASE also recommends credit for military service including basic or recruit training. Credit for military science, physical education, or hygiene and health education at the freshman and sophomore level is

recommended to institutions that normally allow credit for collegiate-level courses in these areas.

Educational services and materials are provided to servicemen on subjects normally taught in civilian academic institutions by the United States Armed Forces Institute (USAFI). Descriptions of this Institute's services and its most recent activities are given by USAFI (1965, 1970). The instructional materials which the Institute supplies include courses for individual correspondence study, group class work, and tests. Over 200 courses may be taken directly from USAFI in subjects ranging from those taught before high school to those generally taught in college. In addition to these directly-available courses, more than 6,000 correspondence courses are available through USAFI in the extension divisions of 46 institutions of higher education. The Institute's services are available to all men and women who are members of the armed services. For an initial nominal fee a student may enroll in his first correspondence course after which he may take additional courses at no further cost as long as his progress is satisfactory.

Although USAFI is headquartered in Madison, Wisconsin, it services and supplies servicemen all over the world. The total worldwide enrollment in USAFI in 1969 was approximately 274,000. Of this total, approximately 59 percent were enrolled in correspondence courses and about 41 percent in group study classes.

Nearly a million tests were administered by USAFI in 1969. The objective of the Institute's testing program is to aid the student in obtaining credit for his knowledge and experience and to assist him in working toward his educational objectives. There are five types of tests administered by USAFI. Two of them, the Tests of General Educational Development (GED) and the General Examinations of the College-Level Examination Program (CLEP), are discussed in the next section of this paper, "College Credit by Examination." USAFI Achievement Tests are employed in determining the areas of academic weakness of individuals at the pre-high school level. The Subject Standardized Tests are achievement tests measuring knowledge in specific subjects, and End-of-Course Tests are used to evaluate student learning in a USAFI course.

The Commission on Accreditation of Service Experiences evaluates and makes credit recommendations for USAFI courses as well as for the Subject Standardized Tests. Recommendations for credit on the basis of performance on the Subject Standardized Tests are made regardless of enrollment in a course by the examinee. Each of the 60 college-level subject tests have been normed by administering them to students in civilian institutions who have completed a course corresponding to the examination. The score at or above the 20th percentile is recommended for credit. This means that a serviceman seeking credit must score better than at least 20 percent of college students completing a course in the subject. It is the prerogative of each college and university, however, to determine the percentile above which credit will be awarded and the amount of credit to be awarded.

Independent Study

The term "independent study" has a number of connotations. It is frequently used to refer to correspondence and television study or any other type of learning which does not take place in the classroom. In the narrower sense independent study refers to formal out-of-classroom learning by resident college students enrolled in a degree program. It is usually a regular part of an institution's instructional program that allows the student to conduct research, read, or work on his own under faculty guidance and direction. Education by work experience or community service projects conducted under the joint direction of the faculty and an external supervisor might also be considered independent study.

Independent study is similar to other types of off-campus study in that it does not require classroom attendance. On the other hand, unlike the other methods of unconventional learning, independent study by students affiliated with an institution is almost invariably assured of receiving recognition in the form of academic credit. For example, Princeton University has recently initiated a Semester-in-the-City program that provides students the opportunity to live in an inner city environment for 4 months working on and studying contemporary problems in an urban core setting. Participation in the program counts as the equivalent of a semester's academic work in residence.

A survey by Brick and McGrath (1969) of curricular innovations in institutions of higher education revealed that about 33 percent of the responding institutions had formal independent study programs for all students. Approximately 66 percent of the institutions, however, indicated that they offer independent study to superior students. Traditionally this method of instruction has been open only to the superior student but there is a growing trend to make it available to all students.

Independent study can take a variety of forms. Some colleges permit upper class students to enroll in a directed reading or research course, affording a student the opportunity to explore a given subject in relatively great depth. Other colleges provide off-campus research projects, work experience in industry, and community service projects.

An experimental investigation of the effectiveness of an independent-study course in library science has been conducted by Walker (1968). The experiment consisted of assessing the achievement and attitudes of a control and an experimental group of students. The students in the control group were taught by the traditional classroom methods while those in the experimental group made use of independent learning materials such as programmed texts. It was found that the achievement of the experimental

group was comparable to that of the control group and that the former group had favorable attitudes toward the course.

Some advantages and drawbacks of independent study are mentioned by Brick and McGrath (1969). Independent study improves the problemsolving abilities of students, fosters self-discipline, and brings about a closer interaction between faculty and students. The major disadvantage of the method is the reluctance of some students and instructors to spend the time and effort necessary to produce useful results.

Work-study programs and community service projects have a number of obvious advantages. Practical experience, which students cannot receive in the classroom, is obtained in work-study programs. Community service projects, in addition to helping the community, are said to develop a seriousness of purpose in students and to provide the opportunity to view their studies in a broader context.

Work experience education plays an important role in junior college vocational programs. Industrial firms frequently have the training equipment the junior college cannot afford to purchase. The advantage to the student of working in industry is that he can earn while he learns. A number of problems, however, can be encountered in work experience education programs, as indicated by a survey of five California junior colleges (Hayes, 1969). The supervision by the employer and the college is not coordinated; the relevance of the job experience to the college courses is questionable; conflict occurs in the class and work schedules; some students are not placed appropriately; and some students focus only on the monetary gain in the program.

Although most colleges award credit to their own students for supervised independent study, they are reluctant to grant formal recognition to students who have experience in a particular field or those who have studied independently outside a college program. Many persons truly learn independently by reading books, going to museums and concerts, or by gaining work experience similar to that for which resident students receive credit. If these unaffiliated individuals can demonstrate their achievement is comparable to that of resident students, there is little justification for not granting academic credit for independent study.

III. COLLEGE CREDIT BY EXAMINATION

Although the practice of awarding academic credit by examination is not new to American higher education, there is nevertheless some resistance to it in many colleges and universities. A number of arguments have been voiced from time to time by educators in support of the view that learning independently or in a nontraditional manner cannot be as good as learning in the classroom. It is argued that college life provides certain experiences other than formal learning by which students gain important values not readily measured by an examination. Even if students do miss certain educational experiences by not attending classes—an assumption that has yet to be verified—there is little justification for preventing those who cannot attend regular college classes from gaining access to higher education, since many candidates for credit by examination are adults holding full-time jobs who cannot attend classes on campus for 4 years. A second argument is that examinations cannot measure learning that takes place over a long period of time and that candidates would study only topics covered by a test and would attend "cram schools." Good examinations, however, can measure long term outcomes and cover the entire content of a particular subject or course. There are shortcuts to pass them. A final argument is that advanced placement rather than credit be granted to students. Advanced placement allows students to waive certain prerequisite or required courses, but is inadequate since it does not reduce campus attendance requirements.

Although statistics on current practices relating to credit by examination are not available, it appears that there is a growing trend by colleges and universities to use tests to grant credit. A survey of the 170 member institutions of the Association of University Evening Colleges and the National University Extension Association describes the practices in the field in 1960 (Center for the Study of Liberal Education for Adults, 1961). Most of the 131 institutions responding to the survey indicated that they have programs of advanced placement or credit by examination. Eighty-eight percent granted either advanced placement or credit or both. The most frequently employed tests were oral tests and interviews, Advanced Placement Tests, Sequential Tests of Educational Progress, and the Tests of General Educational Development. More recently, the tests of the College-Level Examination Program have become widely used for awarding college credit.

Even among those institutions willing to grant credit by examination, however, the ingrained resistance to the practice is evident. Only a limited number of credits can be obtained by examination; uniform standards for awarding credit have not been established; and colleges do little to encourage their applicants or enrolled students to seek credit by examination.

The awarding of credit by examination provides a number of advantages to student, university, and society. Students complete college in a shorter period of time and begin productive careers at an earlier age; increased emphasis by the colleges is given to student knowledge rather than to credits accumulated; educational objectives are formulated in clearer terms; much-needed space becomes available in overcrowded colleges; individuals with nontraditional educational experiences who would not ordinarily pursue a college degree are encouraged to do so.

What follows is a description of three major testing programs widely used for granting academic credit by examination: the College-Level Examination Program, the New York State College Proficiency Examination Program, and the General Educational Development (GED) Testing Program. All concern the college candidate who obtains part of his education outside the classroom. Other programs of credit by examination will not be described because their primary orientation is not toward the student with nontraditional educational experiences. The Advanced Placement Tests, for example, are widely used to grant placement or credit in college to superior students who complete college-level courses while they are still in high school. These and many institutional tests are used to award credit to regular students enrolled in a college. They are not, however, designed for the unaffiliated student.

The College-Level Examination Program

The College-Level Examination Program (CLEP), begun in 1965, is primarily a national program of credit by examination. It is sponsored by the College Entrance Examination Board (CEEB) and administered by the Educational Testing Service. The philosophy and goals of this testing program are outlined in several recent program publications (CEEB, 1968b, 1969c, 1970b, 1970c). The broad purpose of the CLEP, which is to improve access to higher education through a national system of credit and placement by examination, is based on the assumption that many people know much more than their academic credentials would suggest. Some of the specific objectives of the CLEP are to provide a means to evaluate unconventional, out-of-school, college-level education; to make institutions of higher education more aware of the need for credit by examination; to assist colleges and universities in the admission and placement of their transfer students; to provide collegiate institutions a means for evaluating their students' achievement; and to aid adults desiring to meet certification requirements or to qualify for promotion in business or industry.

The rapid growth and acceptance of the CLEP can be seen in the steep rise in the number of candidates taking the CLEP examinations and colleges willing to grant credit on the basis of the examinations. The number of civilian candidates taking CLEP examinations grew from approximately 10,000 in 1966-67 to nearly 50,000 in 1969-70. In 1967 only 55 colleges were willing to grant CLEP credit, but by the fall of 1969 this number grew to 400. The College Board is optimistic about the future of the program. It believes that by 1975 many of the estimated 82 million adults who will be learning in nontraditional ways will want to translate their knowledge into academic credits and that this program will provide the opportunity to do so.

The tests and services offered by CLEP are described by Allyn (1969) and the CEEB (1970c). The two basic types of examinations offered in the program are the General and Subject Examinations. The five General Examinations consist of the English Composition, Humanities, Natural Sciences, Mathematics, and Social Sciences-History Tests. The tests are not designed to measure advanced training in any specific discipline but rather to assess a student's knowledge and comprehension of basic facts, concepts, and principles in each of the five subjects. The content covered by the examinations is similar to the content included in the program of study required of many liberal arts students in the first 2 years of college. A detailed description of the General Examinations is given by CEEB (1969a).

Unlike the General Examinations, which measure broad areas of knowledge, the CLEP Subject Examinations measure achievement in specific subjects. Each Subject Examination intends to measure knowledge acquired in a college-level subject which corresponds to the test. Twenty-two examinations were available in 1970 in subjects as diverse as College Algebra, Geology, Western Civilization, and Introductory Marketing. Additional examinations are currently being developed and more than 100 such examinations are expected to be in the program. Detailed descriptions of each of the currently available Subject Examinations are given by CEEB (1969b).

Despite their basic differences, the General and Subject Examinations have a number of common attributes. They are intended to measure college-level achievement of students with a wide range of educational experiences. They have been developed by subject-matter experts and normed on appropriate groups of college students. Information on scores, norms, reliability, and validity of the examinations is given by CEEB (1967).

A considerable amount of research has been conducted on the General Examinations at individual colleges and universities. The results of these studies have been summarized by Richards (1970) and Sharon (1970). While most of the research provides support for the validity of the examinations as measures of academic achievement in college, the results of many of the studies have alternative explanations. The examinations correlate positively with course grades and amount of previous college instruction. Significant gains on the tests are generally made by students over the first 2 years of college and the highest scores on each test are obtained by students intending to major in the subject covered by the test. There is some question as to whether each of the five examinations is measuring a unique factor.

How can an individual not affiliated with a college or university receive academic credit by the CLEP examinations? First, such an individual would have to determine whether the institution in which he desires to pursue his studies is willing to grant CLEP credit. If CLEP credit is acceptable, then such an individual would take the appropriate examination(s) at one of the 59 CLEP test centers in

the United States where the tests are administered monthly. The fee is $15 for one to five General Examinations and $15 for each Subject Examination. This fee is high enough to discourage the casual test-taker who may hope to do well on the examinations by chance alone.

The CLEP's Institutional Testing Program makes it possible for the student who is already attending a college or university to receive credit by examination. In addition to granting advanced placement or standing to their students, institutions are making varying uses of the examinations (CEEB, 1968b, 1970b). The tests are employed for assessment of transfer applicants, evaluation of academic growth in various curricula, comparison of students with national norms, and the assessment of students' readiness for upper-level study.

It was mentioned earlier that the CLEP General Examinations are part of the USAFI's testing program. The number of General Examinations administered through USAFI to military personnel is currently greater than that generated by civilian examinees. The USAFI (1970) reports that there were 170,347 General Examinations administered in 1969. About 56 percent of the tests taken have been "passed" by servicemen. The passing score is the one recommended by the Commission on Accreditation of Service Experiences (CASE). USAFI does not grant or recommend credit for passing scores but only reports the tests' scores to civilian educational institutions at the request of the student. The United States Armed Forces may accept the credit recommendation of the Commission for military purposes only; e.g., for promotion. Civilian institutions, however, have varying policies of granting credit on the basis of performance on the CLEP examinations, and many have not yet established any policy on the CLEP.

An analysis of the performance of approximately 44,000 servicemen tested within a recent one and one-half year period yielded a number of significant results (CEEB, 1968a). There is a steady and significant progression of scores on all tests from those who have completed only high school to those who have completed 4 years of college. Servicemen completing 4 years of college score about one standard deviation higher on each of the examinations than those who have not attended college. Since only 29 percent of the servicemen in the sample had attended college, it was not surprising to find that the group as a whole performed considerably less well on the tests than the average college freshman, sophomore or senior. It is apparent, however, that college-level achievement can be attained by a large number of adults who have never attended college. Depending on the Test, from 12 to 27 percent of the servicemen who have not studied beyond high school have scored as well or better than the average college sophomore.

Although each college and university is free to decide whether to grant CLEP credit, CASE (1968) has prepared credit recommendations at the request of regional and national accrediting associations. In the case of the General Examinations, it is recommended that the minimum passing score be at the 25th percentile based on national college student norms. Since institutions differ in their standards and student bodies, they are also urged by the Commission to administer the tests to their own students and to establish passing scores consistent with their own standards. It is suggested that 6 semester hours of credit be granted for each General Examination. The total amount of credit should not exceed 30 semester hours of credit, or 1 academic year. For the Subject Examinations it is recommended that credit be given at the 25th percentile of those students in the norming group who received a final course grade of C or better in the course corresponding to the Examination. The number of credits awarded should be the same amount normally assigned for the completion of a similar course given at the institution.

Although the CLEP is not, at the moment, a pervasive force in higher education, its recent rapid growth portends that the practice of credit by examination at the college level will become widespread. The impact of the CLEP and other programs of credit by examination should be especially significant for adults desiring to continue their formal education. Many adults are reluctant to enroll in degree programs because of the necessity of having to repeat material that they already know. The CLEP provides these individuals with an alternative route of obtaining degree credit and thus encourages them to enroll. There are already several colleges of continuing education which are making extensive use of the CLEP examinations and are serving primarily or exclusively adults.

The New York State College Proficiency Examination Program

The College Proficiency Examination Program (CPEP) of New York State was established to provide educational opportunities to individuals who have gained college-level knowledge in nontraditional ways (University of the State of New York, 1963, 1969). Its basic objective is similar to the national College-Level Examination Program but its services are limited to individuals desiring to pursue their studies in New York State's institutions of higher education. The original proposal for the program came from the Committee on Higher Education in 1960. This Committee was concerned about the large number of students who were doing college-level work in an unconventional manner, such as by independent study and by television courses, which in many cases was not recognized toward a formal degree. Anticipating a large increase in the future in the number of nontraditional students, the Committee proposed "that a program be established by the Regents which would permit students to acquire regular college credit for their achievements without regular attendance at form college classes (University of the State of New York, 1969, p. iii)."

In addition to providing college credit for independent study, television courses, industrial training programs, correspondence courses, and similar educational experiences, the CPEP was designed for a number of other purposes. The Program is used for evaluating transfer and foreign students, granting New York State teaching certificates, and aiding adults wishing to pursue a formal degree but unable to attend regular classes.

Unlike the CLEP General Examinations, which are tests of achievement in broad areas, the CPEP Examinations are course-oriented tests. The tests are "designed to measure the major objective of courses, not merely command of factual information." In this way they are quite similar to the CLEP Subject Examinations and to USAFI's Subject Standardized Tests. The 1969-70 CPEP catalog describes 24 examinations ranging from Accounting to the Philosophy of Education. Each examination's description indicates objectives tested, material covered by the examination, suggested study aids (such as lists of books for preparatory reading, television and correspondence courses), the members of the committee which developed the examination, and the number of credits recommended for passing the examination.

Most of the CPEP Examinations are developed by faculty members teaching at colleges and universities in New York State. These faculty members, working in committees, write the test questions, evaluate the candidates' answers, and establish standards for passing scores. Recently several examinations that overlapped with the CLEP Subject Examinations have been discontinued.

The credit recommendations made by the faculty committees are advisory only and need not be followed by New York State colleges. Each institution sets its own policies about granting credit and is free to set its own standards of performance for credit and to determine the amount of credit awarded. The policies of New York State institutions for awarding CPEP credit vary widely. They range from those that allow no credit to one institution that allows a maximum of 66 credits. The recommendation of the State's Regents is to allow a maximum of 60 hours credit, which is usually equivalent to one half of the number of hours required for a baccalaureate degree.

Most of the CPEP Examinations are 3 hours long. They include short answer, multiple choice, essay, and problem questions. Score interpretation is made possible by the administration of each examination to candidates completing a corresponding course in the subject.

New York is apparently the only state that currently has a state-wide program of credit by examination. With the recent growth of the CLEP, a national program of credit by examination, it seems that there is less need for individual states to develop and maintain their own programs. Nevertheless, the CPEP now offers examinations not offered by the CLEP, and therefore performs an important service to the residents of New York State.

The General Educational Development Testing Program

The Tests of General Educational Development (GED) were developed in 1942 by the United States Armed Forces Institute to provide a means for the veterans of World War II to readjust to civilian life as they resumed their educational and vocational plans (Turner, 1968). The GED tests provided the non-high school graduate an opportunity to obtain a high school equivalency certificate and, in certain cases, college credit. Since 1946 the tests have come under the policy direction and supervision of the CASE. High school equivalency certificates issued on the basis of satisfactory performance on the GED came to be accepted as a regular high school diploma by institutions of higher education, business organizations, and civil service commissions. The college-level GED tests that made it possible for college-bound veterans to obtain academic credit were discontinued in 1960 and later replaced by the College Board's College-Level Examinations.

While the original purpose of the GED tests was to help the veteran who did not complete high school adjust to civilian life, the majority of those tested today are civilians. In the calendar year of 1968 there were 265,499 individuals tested at 1,336 centers throughout the United States (GED Testing Service, 1969). Less than one-fifth of these examinees were veterans. Nevertheless, the Armed Forces continue to be large users of the tests. USAFI (1970) reports that 98,345 certificates were issued in 1969 to servicemen for satisfactory completion of the GED battery.

The average age of all those tested in 1968 was 29.5. The mean number of years of previous schooling was 9.7. More than one-third took the tests in order to qualify for higher education (GED Testing Service, 1969).

The GED battery consists of five tests in the areas of English, social studies, natural sciences, literature, and mathematics. The tests are designed to measure knowledge acquired in the typical general educational programs offered in secondary school. Rather than emphasizing knowledge of details, the tests concentrate on the ability to generalize concepts and ideas, to comprehend exactly, and to evaluate critically. The tests are administered primarily in official centers by the various state departments of education. In addition, there are centers in state and federal correctional institutions and Veterans Administration Hospitals that provide individuals an opportunity that might otherwise not be available—to obtain formal recognition for knowledge gained outside school.

The issuing of high school equivalency certificates on the basis of GED is in the jurisdiction of the various state departments of education, not CASE. The Commission, however, makes recommendations to the departments of education as to the minimum critical scores for awarding equivalency certificates. These scores are established on the basis of national norms and are equivalent to the score approximately 20 percent of the high school norms group failed to achieve. Most of the state departments follow

CASE's recommendations exactly or show small deviations from them (CASE, 1966).

The significance of the GED testing program for higher education is in the extensive use of the test battery in the admission of the non-high school graduate to college. A CASE (1969) survey of approximately 2,200 colleges and universities revealed that over 1,600 institutions accept satisfactory GED test scores as evidence of ability to undertake college work. The GED policies of 1,728 of these institutions have been published by CASE (1970).

There have been no published validity studies on the GED in recent years. The early research on the validity of the battery indicates it is a fairly accurate predictor of college success. Currently, CASE is sponsoring a comprehensive study of non-high school graduates accepted to a national sample of approximately 25 institutions on the basis of their GED scores. The success of these students in college relative to the success of regular high school graduates is one of the planned comparisons in this study. The results are expected to be published by the Commission in 1972.

The widespread acceptance of the GED tests as measures of high school achievement is part of the trend of liberalizing the traditional requirements that academic knowledge be acquired in the classroom. Equivalency tests at the college level have not yet gained such wide acceptance. A logical extension of the GED philosophy, however, one that is likely to occur in the near future, is the awarding of college equivalency certificates for successful performance on appropriate examinations.

IV. CONCLUSION

This review has described some of the major ways by which individuals are educating themselves outside the college classroom and the manner by which off-campus learning is translated into college credits. Certain types of nontraditional instruction were not reviewed since little or no literature has been published about them in recent years; that is, the education taking place in business and industry, museums, libraries, churches, and other organizations.

The nontraditional types of instruction reviewed, correspondence and television instruction, military service training, and "independent study" are all part of a growing trend to provide college-level education off campus. An integral part of this trend is the granting of academic credit by colleges and universities on the basis of satisfactory performance on appropriate equivalency examinations. The logical extension of the concept of credit by examination is an "external degree" program that would enable those not enrolled in a college to obtain their degree by passing examinations. External degrees, currently being considered in two states, would transfer the certification of academic credentials from academic institutions to state agencies. Since most colleges and universities are reluctant to award an extensive amount of credit for off-campus study, the proposed external degrees should be a great boon to those who cannot attend regular college classes. The utilization of the untapped talent of many adults would also be of great benefit to society.

REFERENCES

Allyn, N.C. "Evaluating Adults for Further Study." Toronto: Paper presented at the National Seminar on Adult Education Research, February 1969, ED 026 612. MF-$0.65, HC-$3.29.

Association of University Evening Colleges, National University Extension Association. *Programs and Registrations 1968-69.* Norman, Oklahoma, 1970, ED 035 840. MF-$0.65, HC-$3.29.

Brick, M., and McGrath, E.J. *Innovation in Liberal Arts Colleges.* New York: Teachers College Press, 1969.

Brown, R.M. "A Survey of the Viewers of College Courses Taught Over Television." Albany: State University of New York, Albany, Instructional Resources Center, 1967, ED 030 315. MF-$0.65, HC-$3.29.

Carnegie Commission on Educational Television. *Public Television, A Program for Action.* New York: Bantam, 1967.

Center for the Study of Liberal Education for Adults. *College Without Classes: Credit Through Examinations in University Adult Education.* Brookline, Mass.: CSLEA, 1961, ED 030 042. MF-$0.65, HC-$3.29.

Charnley, A.H. *The London External Degree System, Origins and Present Problems.* Cambridge, England: National Extension College, 1967, ED 015 367. Not Available from EDRS.

College Entrance Examination Board. *Score Interpretation Guide.* New York: *CEEB*, 1967.

_____. *Candidates Tested Through the United States Armed Forces Institute.* New York: *CEEB*, 1968a.

_____. *College-Level Examination Program. Description and Uses.* New York: *CEEB*, 1968b.

_____. *CLEP, A Description of the General Examinations.* New York: *CEEB*, 1969a.

_____. *CLEP, A Description of the Subject Examinations.* New York: *CEEB*, 1969b.

_____. *CLEP Progress Report*. New York: *CEEB*, 1969c.

_____. *CLEP Bulletin of Information for Candidates*. New York: *CEEB*, 1970a.

_____. *College Credit by Examination Through the College-Level Examination Program.* New York: *CEEB*, 1970b.

_____. *Tests and Services: College-Level Examination Program*. New York: *CEEB*, 1970c.

Commission on Accreditation of Service Experiences. *State Department of Education Policies*. Washington, D.C.: *CASE*, 1966.

_____. *Granting Credit for Service School Training*. Bulletin No. 8. Washington: *CASE*, 1968.

_____. "Policies of Institutions for Granting Credit for Service School and USAFI Courses and for Admission Based on GED Test Scores." Newsletter No. 32, Washington: December 1969, p. 3.

_____. *College Accreditation Policies for Nontraditional Education*. Bulletin No. 11. Washington: *CASE*, 1970.

Educational Testing Service. "Home Study Programs." *Education Recaps*, 1970, 9, p. 14.

Erickson, C.G.; Chausow, H.M.; and Zigerell, J.J. *Eight Years of TV College: A Fourth Report*. Chicago City Junior College, Chicago, Illinois, 1964.

Fairbanks, D.W. "A Study of Correspondence Students of the Oregon State System of Higher Education." *Dissertation Abstracts.* Eugene: Oregon University, 1968, ED 034 927. Available from University Microfilms, 300N Zeeb Road, Ann Arbor, Michigan, 48106 (Order No. 69-12,604, MF - $3.00, XC - $6.40).

Flaugher, R.L., Mahoney, M.H., and Messig, R.B. *Credit by Examination for College-Level Studies: An Annotated Bibliography.* Princeton, New Jersey: *College Entrance Examination Board*, 1967.

GED Testing Service. *Annual Statistical Report for Calendar Year 1968*. Washington: American Council on Education, 1969.

Harter, D. "Why SUNY Students Fail to Complete Independent Study Courses." New York: State University of New York (SUNY), 1969a, ED 035 814. MF - $0.65, HC - $3.29.

_____. "Reaction of SUNY Students Toward Independent Study Courses." New York: SUNY, 1969b, ED 035 815. MF - $0.65, HC - $3.29.

Hayes, G.E. "Junior College Work Experience Education." Los Angeles, California: University of California at Los Angeles, 1969, ED 035 397. MF - $0.65, HC - $3.29.

Howe, H. "Changing the Pecking Order." Chicago: Paper presented before the College Entrance Examination Board, October 12, 1967, ED 013 790. MF - $0.65, HC - $3.29.

Johnstone, J.W.C., and Rivera, R.J. *Volunteers for Learning.* Chicago: Adline, 1965.

Liveright, A.A. *A Study of Adult Education in the United States.* Brookline, Massachusetts: Center for the Study of Liberal Education for Adults, 1968.

Long Beach City College. *Open-Circuit Television and the Community College.* Long Beach, California: Long Beach City College, 1968, ED 025 249. MF - $0.65, HC - $3.29.

Mackenzie, O., Christensen, E.L., and Rigby, P.H. *Correspondence Instruction in the United States.* New York: McGraw Hill, 1968.

Malcolm, A.H. "Educators Hail Nyquist's External Degree Proposal." *The New York Times,* September 17, 1970, p. 41.

Moses, S. "The Learning Force: An Approach to the Politics of Education." Paper presented at the annual meeting of the American Political Science Association, 1969.

Murphy, J., and Gross, R. *Learning by Television.* New York: The Fund for the Advancement of Education, 1966.

National Committee for Careers in Medical Technology. *Equivalency and Proficiency Testing as Related to the Medical Laboratory Field.* Bethesda, Maryland: NCCMT, 1970.

National Home Study Council. *Documents and Instructions of the Accrediting Commission.* Washington: NHSC, 1961, ED 016 187. MF - $0.65, HC - $3.29.

_____. *Directory of Private Home Study Schools, Fall 1969.* Washington: NHSC, 1970, ED 033 269. MF - $0.65, HC - $3.29.

Pfeiffer, J.W., and Sabers, D. "Attrition and Achievement in Correspondence Study." *National Home Study Council News* (Supplement), February 1970.

Richards, J.M. Jr. *Assessing Student Performance in College.* Washington: ERIC Clearinghouse on Higher Education, 1970.

Rugaber, W. "Boom in Mail-Order Schooling Marked by Dubious Practices." *The New York Times,* May 31, 1970, p. 1.

Sharon, A.T. *Measurement of College Achievement by the College-Level Examination Program.* College Entrance Examination Board Research and Development Report RDR-69-70, No. 5; Research Bulletin RB-70-38. Princeton, New Jersey: Educational Testing Service, 1970.

Spurr, S.H. *Academic Degree Structures: Innovative Approaches.* New York: McGraw Hill, 1970.

Stecklien, J.E., Ringo, E.N., and MacDonald, J. *Students Enrolled in the TV College, General Extension Division, Fall 1965.*

Minneapolis: University of Minnesota, Bureau of Instructional Research, 1966, ED 022-112. MF - $0.65, HC - $3.29.

Time. "Self-Made College." July 6, 1970, p. 53.

Turner, C.P. *A Guide to the Evaluation of Educational Experiences in the Armed Services.* Washington: American Council on Education, 1968.

United States Armed Forces Institute. *Catalog, Fourteenth Edition.* Madison, Wisconsin: USAFI, 1965.

_____. *Activity Report, Calendar Year 1969.* Madison: USAFI, 1970.

University of the State of New York. *College Proficiency Examination Program, Credit by Examination.* Albany: State Education Department, 1963.

_____ *The New York College Proficiency Examination Program* Albany: State Education Department, 1969.

University of Washington. "Correspondence Study: Faculty Evaluation; Phase I of the State-Wide Correspondence Study: Faculty Evaluation." Report No. IER 127. Seattle: Office of Institutional Educational Research, 1968, ED 028 317.MF - $0.65, HC - $3.29.

Walker, R.D. "Independent Learning Materials in Library Science Instruction." Madison: University of Wisconsin, 1968, ED 025 296. MF - $0.65, HC - $3.29.

Young, J.J. "Former Servicemen of the Army Medical Department: A Profile and Assessment of an Untapped Resource of Allied Health Manpower." Unpublished Doctoral Dissertation. Iowa City: University of Iowa, 1970.